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***HELIOTROPIMUM DISCIFORME* (BORAGINACEAE) A NEW SPECIES**

**FROM NORTHEAST OF IRAN**

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**A b s t r a c t :** *Heliotropium disciforme* is described as a new species from the northeast of Iran. The species is characterized by a disc-like glabrous stigma and a tubular, minute corolla.

During a botanical expedition to Khorassan Province for collecting and field studies of *Heliotropium* in Iran, an interesting *Heliotropium* species was found in the northeast of Iran near the border of USSR. After the expedition I found an earlier gathering of this species in Mashhad University Herbarium (Mashhad UH). The most characteristic feature of this species is the disc-like, glabrous stigma.

***Heliotropium disciforme* AKHANI spec.nov. (Fig.1)**

Planta annua, 10-45 cm alta, erecta; caulis oblique ramosus, basi raro ramosus. Indumentum albo-villosum, subpatens, pilis ad basin tuberculatis. Folia late elliptica, 1,5-6 x 1 - 3,5 cm, supra luteo-viridia, indumento laxo, pilis patentibus, ad basi tuberculatis, ad nervos impressa, subtus atro-viridia, pilis densissime patentibus, ad basin semper tuberculatis, ad nervos prominentia; apice obtusa vel rotundata; margine revoluta basi rotundata, petiolo c.1-3 cm. Inflorescentiae terminales vel laterales, laterales aphyllae, elongatae, ± ramosae, floribus secundis, uniseratis; cincinnae usque ad 10 cm longae, 10-40 florum. Calyces sessiles, laciniae fere liberae, lineari-oblongae, 2-3 mm longae, 0,5-0,7 mm latae, obtusae, extus patenti-villosae, intus ad 3/4 superiores pilosae, ad 1/4

inferiorem subglabrae. Corolla tubulosa, minuta, 2,5-3 mm longa, basi expansa, fauce paulo constricta, lobi minuti, 0,2-0,5 mm, inter lobos breviter dentata, plicata, aestivatione imbricata, intus glabra, extus usque ad 2/3 inferiorem retrose pubescens, ad 1/3 superiorem antrorse pubescens. Antherae 0,6-0,7 mm longae, ad 0,3-0,5 mm, corolla basi insertae. Stigma disciforme vel pileiforme, glabrum, sessile, 0,5-0,6 mm diametro, 0,2-0,4 mm longum. Nuculae ovatae, 1,8-1,9 x 1 mm, papillosae,  $\pm$  laeves.

Typus: Iran; Khorassan: c.100 km NE of Mashhad; 5 km after Sanganeh towards Mashhad, black gravelly and scree soils around the road, 650 m, 17.6.1990, H. AKHANI, 6480 (holo: MMTT, Natural History Museum of Iran; iso: W., and herb. Podlech, München).

***Heliotropium disciforme* AKHANI spec.nov.**

Annual, 10-45 cm high, erect, obliquely branched from main stem, rarely branched at the base. Indumentum whitish villous, subpatent, tuberculate at base. Leaves broadly elliptic, 1,5-6 x 1-3,5 cm; upper surface yellowish green with sparse tuberculate patent hairs, and impressed nerves; lower surface dark green, covered by dense tuberculate patent hairs, nerves prominent, apex obtuse or rounded, base rounded; petiole c.1-3 cm. Inflorescence terminal or leafless lateral, unilateral, uniseriate,  $\pm$  branched; cymes up to 10 cm, with 10-40 flowers. Calyx sessile, nearly free to base, linear-oblong, 2-3 x 0,5-0,7 mm, obtuse, outside patent villous, inside in the upper 3/4 pilose, in the lower 1/4 subglabrous. Corolla tubular, minute, 2,5-3 mm, expanded at the base, somewhat constricted in throat; lobes minute, 0,2-0,5 mm, with minute teeth between lobes; aestivation imbricate, distinctly plicate, inside glabrous, outside up to 2/3 of corolla length appressed hairy with hairs directed downwards, in the remaining part (1/3) appressed hairy with hairs directed upwards. Anthers 0,6-0,7 mm, inserted 0,3-0,5 mm above corolla base. Stigma disc-like to pillow-shaped, glabrous, sessile, 0,5-0,6 mm in diameter, 0,2-0,4 mm long. Nutlets ovate, 1,8-1,9 x 1 mm, minutely papillose,  $\pm$  smooth.

**D i a g n o s e :** *H. disciforme* is a very interesting species characterized by disc-like to somewhat pillow-shaped glabrous stigma, minute corolla length and minute corolla lobes. Its affinity is not clear. The stigma shape is similar to *H. agdense* from the south of Iran, but its corolla and other characters are completely different. Glandulose hairs on the outside of the corolla, which are present in the two related species v.s. *H. agdense*

and *H. suaveolens*, are absent in *H. disciforme*.

**M a t e r i a l s e e n :** Khorassan: c.100 km NE of Mashhad, 5 km after Sanganeh towards Mashhad, 650 m, 17.6.1990, AKHANI, 6480 (MMTT, Type); c.110 km NE of Mashhad, near Sanganeh, 560 m, 17.6.1990, AKHANI, 6463 (MMTT); c.110 km NE of Mashhad, Chahchaheh, near USSR frontier, 460 m, 17.6.1990, AKHANI, 6458 (MMTT); 19 km SE of Kalat, Gholan-Ghoush, 950 m, JOHARCHI & ZANGOUEI, 15618 (Mashhad University Herbarium).

Almost all the above localities are close to Turkmenistan of USSR. So it is more likely that the species will be found there.

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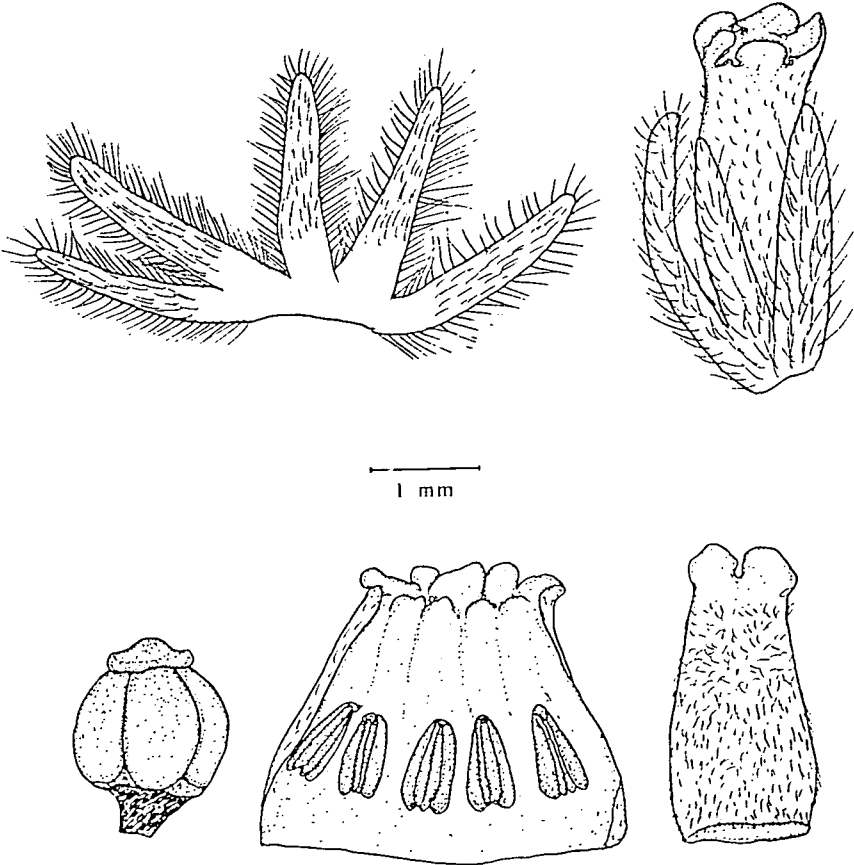
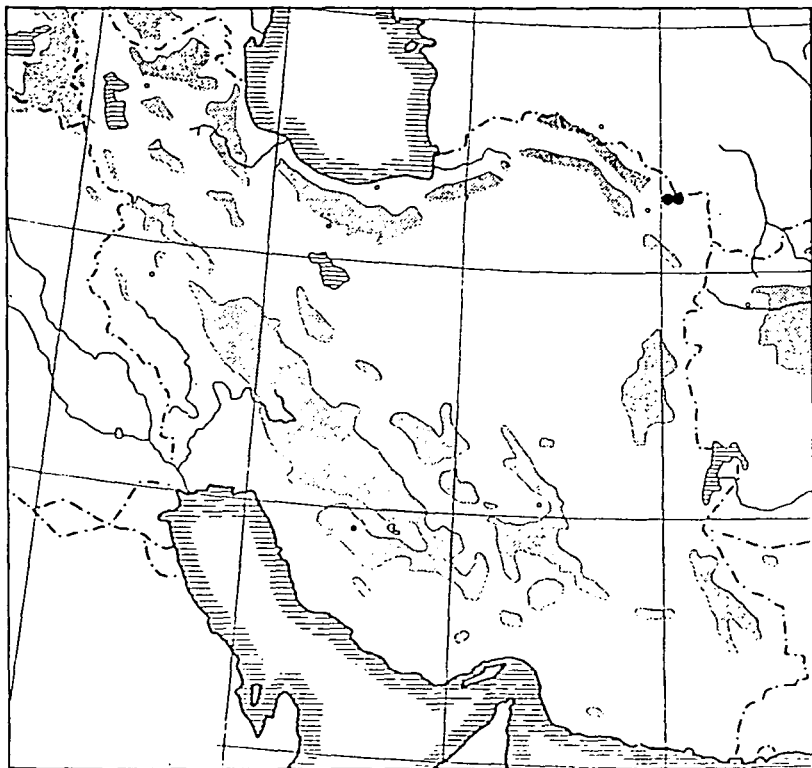


Fig.1: *Heliotropium disciforme* AKHANI



Map 1: Distribution map of *Heliotropium disciforme* AKHANI